

REMARKS

The instant application discloses (Example 1) a foamable composition which can be used in the production of various structural panels, e.g., those of Figs. 6 and 34, in which there is a surface layer chemically and mechanically bonded to a body of a thermoset, cellular urethane as a consequence of cure of the urethane to its thermoset condition while forced against that surface layer. To produce the structural panel, such a composition as that disclosed in Example 1 is introduced into a mold so that it is in contact with a surface to which a thermoset cellular urethane is to be chemically and mechanically bonded. The composition is then confined so that CO₂ which is formed causes foaming, which forces the composition into intimate contact with the surface while chemical reaction which produces the thermoset cellular urethane proceeds. The paragraph which bridges pages 24 and 25 of the application, as has been discussed previously, shows that high strength is achieved by the process described thus far, but that the strength is greatly reduced when chemical and mechanical bonding between the surface and the foamable composition is prevented

Claims 7 and 9 are rejected, 35 USC 102(b), as being anticipated by US patent 4,324,834 ("PAGE et al."). The action says:

"PAGE et al. discloses the use of a structural panel including a rectangular shaped thermoset, cellular urethane body (11) having a surface layer (12) of another material thereon, column 2, lines 51-53. In reference to claim 9, the surface (12) is chemically bonded to the body (11) through the use of a binder, column 2, line 54."

The portion of the reference (column 2, lines 51-54) to which attention is directed in the rejection says:

"a layer of urethane foam 11 has a layer of expanded ceramic material 12 on either side thereof. If a board-like sheet of insulation is formed, the expanded ceramic insulation 12 would, of course, use a binder such as silicate."

The paragraph of PAGE in which the foregoing quotation appears concludes as follows:

"The silicate and ceramic are combined, placed in a forming mold and gased by 50 cubic feet of CO₂ per board foot of mixture forming CO₃. This allows for demolding within a two-minute period. The casting is then fired at 250 degrees for one hour to dry off excess moisture or placed in a microwave oven to obtain the same result."

It is clear from the complete quotation that the binder to which the Official action directs attention is suggested solely for the purpose of making the "expanded ceramic insulation 12" into a board-like sheet. Indeed, PAGE does not suggest a structure wherein "a layer of urethane foam 11" is bonded to "a layer of expanded ceramic material 12", much less one where such a bond is formed as a consequence of cure of a urethane to its thermoset condition while forced against a surface of the "expanded ceramic material", as now claimed. Reconsideration and withdrawal of the rejection based upon PAGE are respectfully requested.

The Official action also rejects claims 7, 9 and 26 under 35 U.S.C. 102(b) as anticipated by US Patent #6,044,604 to CLAYTON et al, saying:

CLAYTON et al. discloses the use of a structural panel (10) including a rectangular shaped thermoset cellular urethane body (11) having a surface layer (15) of another material thereon, column 5, lines 26-28 and 37-44 and column 6, lines 48-58. In reference to claim 9, the surface (15) is chemically bonded to the body (11). Regarding claim 26, the surface layer (15) is metal in the form of an aluminum foil, column 5, line 39."

CLAYTON et al. does not disclose the presently claimed panel which, in the language of amended claims 7,

consists essentially of a body of a thermoset, cellular urethane, said body being substantially right rectangular parallelepipedal in shape, having opposed major surfaces, and a surface layer of another material chemically and mechanically bonded to at least one of the opposed major surfaces as a consequence of cure of the urethane to its thermoset condition while forced against that surface or surfaces.

Instead, CLAYTON et al. shows (Fig. 2) the deposition of a foamable composition 36 from a mixhead 30 onto a board 14 which is being conveyed to the right in Fig. 2 between belts 24 and 25 and under a facer 15. The reference says:

"The mixhead 30 then supplies an appropriate mixture 36 of resins from the reservoirs 31 and 32, as well as an appropriately metered amount, onto the surface of the moving board 14. Subsequently, and slightly downstream of the mixhead 30, the facer 15 is fed into the drive assembly 21, passing around a feed roller 38, which positions the facer 15 against the upper belt 24. As the board 14, facer 15 and deposited foamable composition are conveyed, the latter rises, as depicted at 40, until the facer 15 is in complete contact with the upper belt 24. It is to be appreciated that the belts 24 and 25 are adjustable to accommodate the desired thicknesses of board 10.

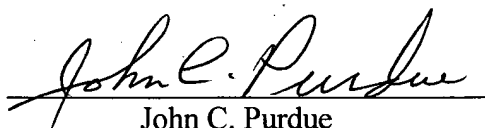
After the foaming has completed, the intermediate product, indicated by the numeral 42, is heated to effect curing of the polymer. This is accomplished by appropriately located heaters, generally 44, or by passage through an oven (not shown). After heating for the appropriate time (residence) and temperature, the product emerges from the laminator and is cut to length to produce the boards 10."

The sides of the foamable composition are not confined in any way in the Fig. 2 process of CLAYTON et al. Therefore, the patent does not disclose the foam of amended claims 7, 9 and 26. Further, CLAYTON et al. is not a reference against these claims of the subject application, because of its entitlement to the benefit of the February 8, 1996 filing date of the applicant's Provisional Application 60/011,352. Copies of the applicant's file copy of the provisional application (46 pages of the application and Figs. 1 through 28 of the drawings) and of the filing receipt are enclosed.

The disclosure of the subject application includes drawings numbered Fig. 1 through Fig. 50 and a disclosure which refers to those drawings. The disclosure of the Provisional Application includes drawings numbered Fig. 1 through Fig. 28 and a disclosure which refers to those drawings. Figs. 1 through 28 of the two applications and the disclosures of the two which refer to those figures are substantially identical. A part of the common disclosure describes the production of "a structural member according to the instant invention which is indicated generally at 10 in Fig. 6." (see the Provisional application, starting with the first complete paragraph on page 19.) This disclosure constitutes a constructive reduction to practice of the invention of claims 7, 9 and 26. Therefore, the claims are entitled to the benefit of the February 8, 1996 filing date of the Provisional Application, and CLAYTON et al (filed August 18, 1998) is not a reference. Similarly, a related CLAYTON et al. patent (No. 5,735,092, filed September 23, 1996) is not a reference. The rejection of claims 7, 9 and 26 on CLAYTON et al. is not proper and should be withdrawn.

Withdrawal of the rejections on PAGE et al. and on CLAYTON et al., allowance of claims 7, 9 and 26, and an action on the merits of the claims that have been held to be withdrawn are respectfully requested.

Respectfully submitted,


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